

city, a mile or more from the French streets. Probably the species, though fully naturalized, has not extended its range so far.

All the indications are that *Rumina* was introduced in Mobile a century or more ago, during the French rule, and in all probability it was brought from some French port. The New Orleans race may be as old or older; both cities date from the 17th century. I shall not be at all surprised if *Rumina* turns up in Pensacola, another old colony; and it is more than probable that other European species may be found in these Southern cities.

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### SPHAERIIDAE, OLD AND NEW.

BY V. STERKI.

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A revision, or monograph, of the North American *Sphæriidæ* has been demanded for years. But the way is not clear: very much is yet to be learned with respect to many species, their interrelations, the extent of their variation, and their distribution. A great deal of material for study from all over the continent is still desirable. A catalogue of the known species, with some notes will be published soon, and on the following pages will be found some descriptions and rectifications.—The numbers cited are those of the special collection of *Sphæriidæ*.

*Pisidium abditum* Haldeman, Proc. Acad. Phila., I. p. 53, 1841; Prime, Mon. Corb. 1865, p. 68.—The *P. abditum* muddle has been the greatest stumbling block in the otherwise difficult study of *Pisidium*. Beginning with T. Prime, this "species" has been the general dumping ground into which almost anything was thrown that was not plainly "a black bass or a snapping turtle," or to remain serious, any *Pisidium*, even such as *noveboracense*, *variabile*, *æquilaterale*, *compressum*, etc., and occasionally *Sph. occidentale*.

The authentic specimens, from Lancaster Co., Pa., in the T. Prime collection<sup>1</sup> are of a rather small form but serve to define the

<sup>1</sup>They had been there for about seventy years, and remained covered with a ferruginous crust so that their real shape, surface sculpture and color could not be seen. Now they are clean. Of the seven, five are immature, of a rather small form, as noted, 2.8–3.3 mm. long, the others, two pair of valves, are 3.8–4 mm. long. The description, in Mon. Corb., is quite inadequate, even with respect to the original form: "very inequilateral" [should be inequi-

species, which is really widely distributed, common and very variable, even if restricted after eliminating the three following species and some others which are clearly distinct.

The mussels of the typical and near-typical forms average larger and more inflated. It appears that there are several geographical subspecies; the following is one of them:

*P. abditum subrotundum* St. (*P. subrotundum*, The Nautilus XX, p. 19, 1906) The mussel is less inflated than in *abditum*, averaging smaller, the beaks are broader and less elevated; rather uniform. Appears to be a northern form; New England to Ontario, Michigan and northern Ohio.

*P. minus* (Ad.), *Cyclas minor* Ad., Proc. Boston Soc. N. H. I, p. 48, 1841; ranged under the syn. of *P. abditum* by Prime, Mon. Corb., p. 68. Is distinct so far as can be judged from the authentic specimens (3 valves, from Waybridge, Vt.) in the T. Prime collection, but appears to be rather rare. Specimens fairly well agreeing with them have been seen from: Duxbury, Mass. (W. F. Clapp, No. 6969); Denisville, Me. (Dr. Jas. Lewis' collection, now Mr. Bryant Walkers' No. 2582); Klinger's Lake, St. Joseph Co. Mich. (B. Walker, 6846); Ann Arbor, Mich. (H. E. Sargent, No. 3099, none full-grown); Cowley Farm, Nepean, Ont. (Justice F. R. Latchford, No. 6929), and apparently Greenport, L. I, N. Y. (J. B. Henderson from Sanderson Smith, No. 675).

*P. regulare* Pme., Boston Journ. VI, p. 363, pl. XII, figs. 11, 12, 1852. Also arranged under the synonymy of *P. abditum*, in Mon. Corb., l. c.; certainly not a form of *abditum*, to judge from the single specimen from "Ohio" in the Prime collection, ranging nearer *P. noveboracense* Pme., but appears to be distinct. Specimens identical were collected near Douglas Lake, Cheboygan County, Michigan, 1911, by Mr. H. B. Baker, Nos. 7084 and 7085, and probably the same near Geauga Lake, southeast of Cleveland, Ohio, by Mr. John A. Allen, 1910, No. 6542. Others were seen before but not recognized.

partite]: generally not so, and the figure shows rather the contrary and, by the way, has the beaks too high and otherwise faulty; "generally light straw color" is exceptional: generally light to dark corneous, often yellowish "cardinal teeth separate" is meaningless; "long. 0.15, lat. [= alt.] 0.14: diam. 0.09 inches" does not agree with "shell elongated," and with the figure "The surface is at times also quite rough and the striæ coarse"—conf. with; "the exterior surface is much smoother" (than in *P. noveboracense*).

*Pisidium sphaericum*, n. sp.—Mussel very inequiptartite, strongly inflated, nearly globular; superior margin nearly straight, short, posterior subtruncate, the others rounded, supero-anterior slope barely marked; beaks near the posterior end, high, prominent over the hinge margin, rounded; scutum and scutellum distinctly marked; surface dull to slightly glossy, with fine, irregular striae and a few lines of growth, color yellowish to grayish corneous, lighter along the margins, often with brown to blackish mottlings, whitish to straw in the young; shell rather strong, posterior muscle scars and pallial lines distinct; hinge stout, curved, cardinal teeth rather small, the right angular, with the posterior part thicker and grooved, the left anterior short, abrupt, angular, the posterior steeply oblique, little curved; ligament strong. Soft parts not examined.

Long. 5.6, alt. 5.3, diam. 4.6 mm. (100 : 95 : 82).

Long. 4.8, alt. 4. diam. 3.4 mm. (100 : 84 : 71).

Hab.; New England to Virginia, Ontario and Wisconsin (?): Westbrook, Me., collected by Prof. A. H. Norton; Saco, Me., Danvers and Lynnfield, Mass., by the Rev. H. W. Winkley; George R. North, Warren, Knox, Co., Me., by N. W. Fermond; Cambridge and Woburn, Mass., by Wm. F. Clapp.; Va. oppos. Washington, D. C., Sterki; Unalitoulin Id., Ont., by Justice F. R. Latchford; Fox River, Wis., by Geo. T. Marston, sent by E. W. Roper (if no label was misplaced; one of the two specimens in the collection is true, the other is a *P. abditum*).

Types: No. 797, Westbrook Me., for full-grown specimens, No. 727 Saco Me., and 6641, Lynnfield, Mass., for juv. and adolescent of a smaller form; yet anyone of the lots in the collection might serve as types.

This very distinct and characteristic *Pisidium* has been known for many years, but unfortunately much misunderstood and ill-treated. Generally it has been taken for a form of *abditum*; the late E. W. Roper named it *adamsi*, and under that name, specimens are in various collections; I have named it *P. minus*, having seen two specimens under that name, in a collection, but from that species it is also distinct, as evidenced by authentic specimens of *minus*.—From larger forms of *abditum* it is easily distinguished by the large and prominent beaks situated close to the posterior end of the mussel, and the strong hinge. In the young, the superior and supero-anterior margins form a peculiar somewhat angular curve, much as

in the young of *P. compressum* Pme.—It cannot be mistaken for any other species.

*Pisidium allenii*, n. sp.—Mussel rather large, well inflated, oval to ovoid in outline, without any projecting angles, beaks slightly behind the middle, large, prominent, rounded; scutum and scutellum slightly marked, small; surface shiny, with irregular striæ and several (4–6) strongly-marked lines of growth, color straw to light yellowish, plumbeous around the beaks in old specimens; shell and hinge medium strong, the latter rather long, cardinal teeth placed on the upper part of the hinge plates, the right angular with the posterior part thicker and grooved, left anterior short, pointed, the posterior oblique, rather long, nearly straight, ligament strong.

Long. 6.2, alt. 5, diam. 3.8 mm. (100 : 81 : 61). Half-grown specimens are rather different in shape, somewhat oblique, moderately inflated, posterior margin subtruncate, beaks markedly low and broad, apparently more posterior; young mussels are very flat.

Hab.—New England, New York; Hebron and Buckfield, Oxford county, Me., collected by Mr. John A. Allen; Franklin county, Me., by Mr. N. W. Lermond; “N. H.” in the collection of Dr. James Lewis (B. Walker’s), and that of the Cincinnati Soc. N. H.; Clifton, Staten Island, N. Y., Mr. J. B. Henderson, from Sanderson Smith. Types No. 5871a from Hebron, Me.

The only species to which this has resemblance is *roperi* St., which is much smaller, with shell and hinge slighter, and half-grown specimens not so oblique, and markedly constant over a wide territory. I take pleasure in naming the species in honor of Mr. J. A. Allen, who has done much good collecting in New England and Ohio.

(*To be continued.*)

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#### OREOHELIX COLONIES IN COLORADO.

BY JUNIUS HENDERSON.

(*Concluded from Vol. XXV, p. 139*)

#### OREOHELIX COOPERI (W. G. B.)

Where the formations were badly cut up by igneous intrusions and displaced by folds and faults, in the neighborhood of Rabbit Ears, and elsewhere, attention was sometimes called to the existence of the calcareous formations in unexpected places by the presence of